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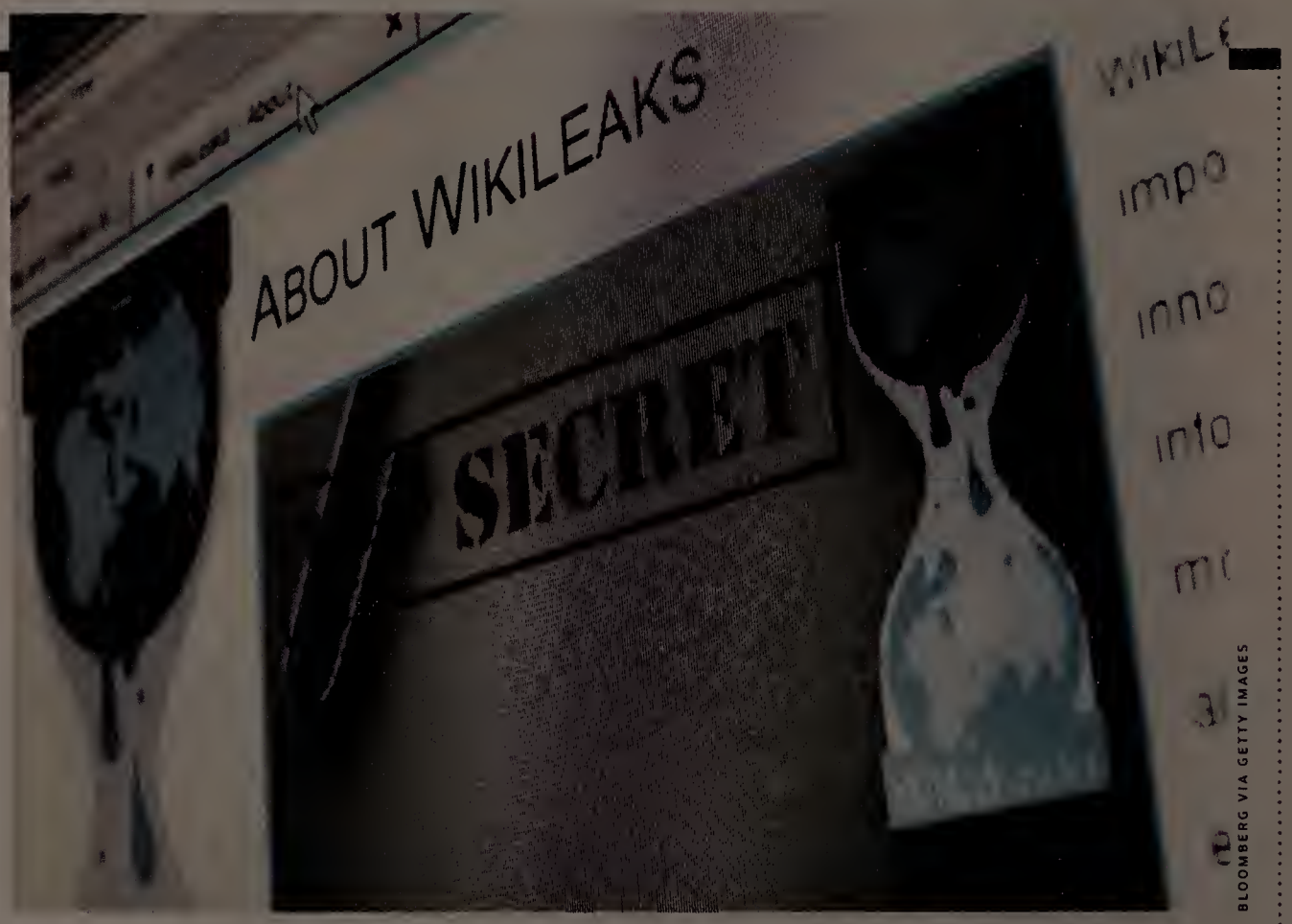

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SECURITY MONITOR

WikiLeaks Triggers IT Security Angst

WIKILEAKS' POSTING of classified U.S. Department of State cables, and the Web site's revelation that it will soon post sensitive internal documents from a major U.S. bank, has stoked data security concerns among governments and corporations around the world.

A suspect in the leak is a low-level U.S. Army intelligence analyst who allegedly siphoned data from classified networks onto a USB flash drive and rewritable CDs.

Such gaps in information security could easily happen in the private sector as well, said Doug Powell, manager of smart grid security at BC Hydro in Vancouver.

Sensitive information requires access controls, classification levels and effective monitoring. For example, classified data should have "tags" to prevent it from moving outside of a protected domain without scrutiny or permissions, Powell said.

But a Gartner Inc. bulletin said that leaks of confidential information — either by insiders or hackers — are "almost inevitable," so organizations should expect that any memo they create could be disclosed.

Gartner urged IT professionals to "use this WikiLeaks event as an opportunity to war-game with your business colleagues the impact [of] similar leaks from your own enterprise."

Gartner advised its clients that if information to be discussed in a meeting is so important that its disclosure would prove crippling, they should "prevent any recording of it, including minutes typed on a computer."

– Jaikumar Vijayan and Mitch Betts

DATA CENTERS

CUE, WUE Join PUE Among Green Metrics

The Green Grid – the consortium that developed the Power Usage Effectiveness, or PUE, metric for measuring energy efficiency in data centers – announced earlier this month that it is developing two more metrics that address carbon emissions and water usage.

The newly released Carbon Usage Effectiveness, or CUE, metric is intended to help IT managers measure greenhouse gas emissions from the IT gear in a data center, said Larry Vertal, executive director of The Green Grid.

The first version of CUE includes the direct emissions of the data center, primarily from backup power generators, and the emissions of the power utility, Vertal said. A future version will include "everything else," such as the emissions of the mining and manufacturing operations that supply fuel and equipment to the power utility, he said.

A third metric, Water Usage Effectiveness, or WUE, will be released by next March. WUE will determine the amount of water used by the facility and the efficiency of that usage in IT operations.

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The widely adopted PUE metric measures how much of the electricity used by a data center goes to the IT equipment as opposed to being lost on cooling systems or inefficient power supplies.

– JAMES NICCOLAI AND PETER SAYER, IDG NEWS SERVICE

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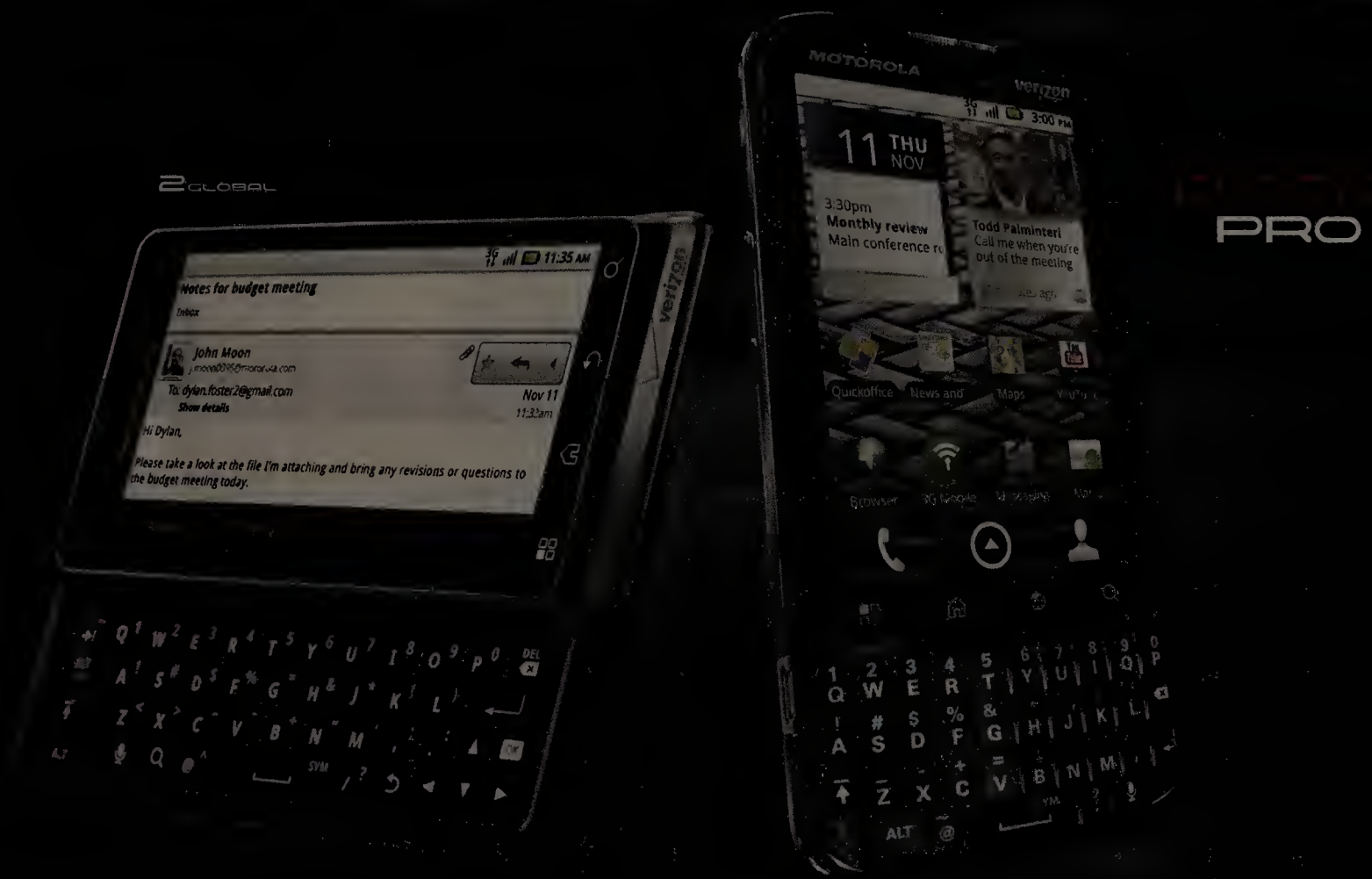

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BETWEEN THE LINES
By John Klossner

CLOUD COMPUTING

Feds Can Learn from L.A.'s Google Deal

THE U.S. General Services Administration, which recently announced plans to move all employees to a cloud-based e-mail system, could learn a lot from the early experiences of the Los Angeles city government, an analyst said.

Los Angeles was one of the first big government installations of Google Inc.'s Google Apps for Government offering. "L.A. has had both positive and negative experiences with its transition," said Shawn McCarthy, an analyst at IDC Government Insights, in an online forum. "GSA will need to tread carefully in order to avoid some of the speed bumps experienced by the city."

Google and systems integrator Computer Sciences Corp. had a "tough summer" with the Los Angeles project, though many problems were worked out after a few months, McCarthy said. For example, the companies missed one deadline because the system couldn't fulfill all of the police department's security and archiving requirements. And a July report noted that some employees said they "consistently experienced delays in receiving e-mail, up to several hours," though by fall, delivery times had improved.

Google also needs to add other functions to the e-mail service, such as auto-generation of confirmation receipts, especially for messages about legal matters such as subpoenas, McCarthy said. Without that feature, some employees had to retain access to the older Novell GroupWise e-mail system, he said.

On a positive note, Google's cloud-based e-mail and applications should save the city $13.8 million over the life of the five-year contract, he said, and IT managers have given the system high marks for reliability and security.

The lesson for the GSA, McCarthy said, is to "proceed slowly, to give Google incentives to improve performance, and to carefully plan its transition away from any e-mail system [used for] special functions" such as the delivery and receipt of legal documents.

– Mitch Betts

Micro Burst

In a survey of 100 CIOs,

51%

of the respondents predicted that some employees will replace their notebooks with tablets in the next two years.

FUTURE WATCH

Shape-Shifting Touch Screen Is On the Horizon

Microsoft Corp. claims it has invented a way to make a computer display change its shape under a person's fingertips.

The company applied last month for a U.S. patent for a tactile touch-screen technology that it calls a "light-induced shape-memory polymer display screen."

Such a display could generate small ridges and textures on its surface that could work as navigation guides. For example, it could produce a virtual keyboard that would feel like a real keyboard, according to the patent application.

To do that, the display would contain a "topography-changing layer" made up of "shape-memory polymers" that would change shape in response to the ultraviolet light signals received.

The technology is meant to be used in the table-size Microsoft Surface, but in theory, it could also be used in mobile devices.

With the new screens, "there would be no more reason for mobile keypads – they would simply be emulated when necessary," said Patrick Baudisch, a display interaction expert at Germany's University of Potsdam, in an interview with *New Scientist* magazine.

– JOAB JACKSON, IDG NEWS SERVICE

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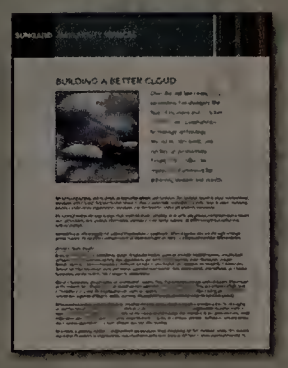

Download the white paper "Building a Better Cloud" at: sungardas.com/cloud5

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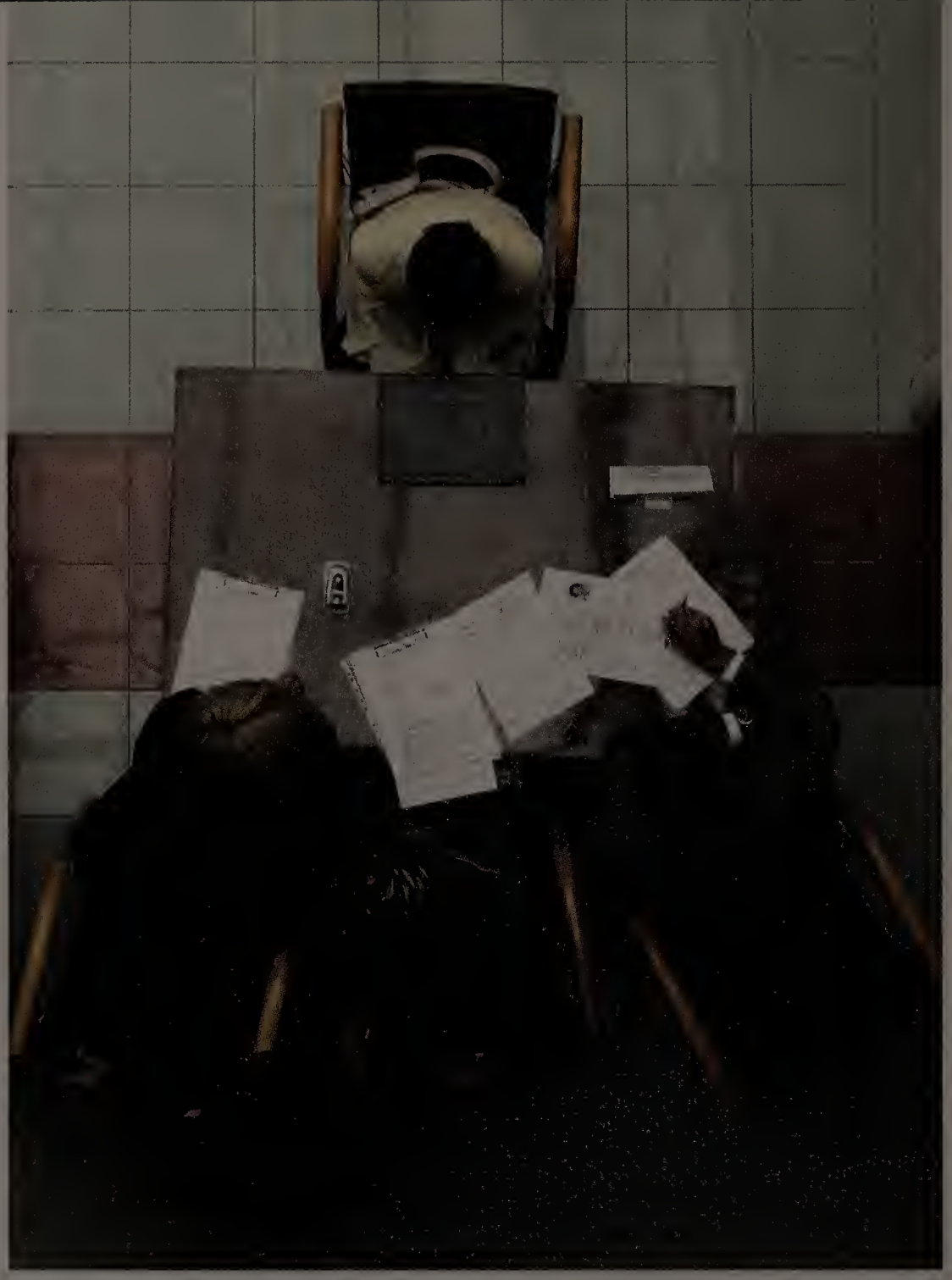

NEWS ANALYSIS

Job Prospects Improve For Some Tech Workers

Analysts say large IT operations will boost hiring next year, mostly for those with both technology and business skills. By Patrick Thibodeau

PERHAPS THE BEST THING to be said about IT hiring in 2010 is that mass layoffs tapered off significantly from their height during the 2008-09 recession, and that the long-term trend finally seems to favor job growth, albeit at a slow pace.

IT industry group TechServe Alliance said that its analysis of a U.S. Department of Labor report released early this month found that IT employment increased by 600 jobs in November on a base of 3.9 million jobs. Overall, U.S. employers added 39,000 jobs last month, according to the government report.

> **The layoffs are over,** people are starting to add workers to their payrolls, but it is going to be modest.
>
> VICE PRESIDENT OF RESEARCH, COMPUTER ECONOMICS INC.

TechServe said that based on its monthly analysis of government jobs reports, IT employment increased by 2.5% from January through November of this year.

For sure, some IT workers are still losing their jobs, particularly in the weakest areas of the economy, such as state and local government. Camden, N.J., for example, recently announced plans to lay off one in four city workers, including about four IT staffers, to cover a large budget shortfall.

Tech spending is expected to rebound next year, with IDC predicting 5.7% growth, up from 3% this year. It remains unclear whether that increase will translate into hiring or outsourcing.

One clue that IT hiring should improve next year comes from market research firm Computer Economics Inc. In a recent survey of IT managers at 136 firms in the U.S. and Canada with revenues over $50 million, it found that 48% of the managers polled plan to add staff next year. Only 11% said they expect to cut staff in 2011.

"The layoffs are over, people are starting to add workers to their payrolls, but it is going to be modest," said John Longwell, the firm's vice president of research.

According to Society for Information Management surveys, employers are seeking a balance of skills from IT professionals, including technical skills, general business and industry knowledge, negotiation and communication skills, and a sense of ethics, said Jerry Luftman, a professor at Stevens Institute of Technology who conducts IT budget allocation surveys for SIM.

Summarizing the employer's viewpoint, Luftman said, "If you're just going to offer me technical skills, I might as well go offshore and get it a lot cheaper."

However, he's bullish on the IT employment outlook for tech workers who also have business skills, which will likely help them survive as offshore outsourcing increases.

Business advisory and consulting firm The Hackett Group said companies are turning more and more to outsourcing to cut costs, which could blunt job growth somewhat. Sending IT work offshore is "the new reality," said Chief Research Officer Michel Janssen. "It's not good if you are an employee looking for a job, but [offshoring] is required for survival" at many companies. ◆

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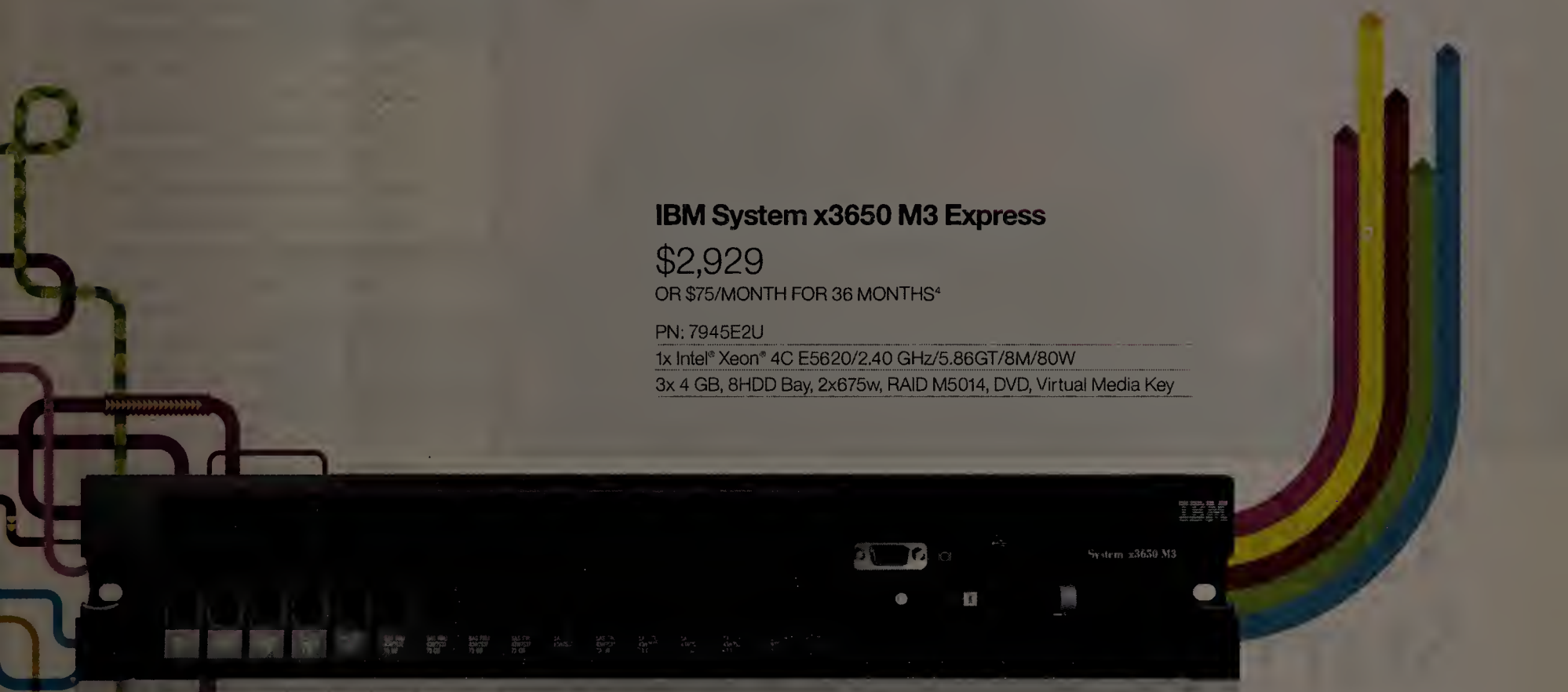

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Dale Frantz speaking at a *Computerworld* Premier 100 IT Leaders event

Theft Conviction Sends Star CIO Back to Prison

Dale Frantz is sentenced to six years in jail for embezzling from a third employer, Auto Warehousing Co. By Patrick Thibodeau

DALE FRANTZ was a rising star at Auto Warehousing Co. through the mid-2000s, a CIO who earned $250,000 a year and was respected by his peers. He was also a thief who embezzled more than $500,000 between 2007 and 2009 by faking expense reports and reselling his employer's equipment.

Judge Robert Bryan earlier this month sentenced Frantz, 46, to nearly six years in prison on fraud charges. Frantz was also ordered by the Tacoma, Wash., federal judge to pay $516,358 in restitution to Portland, Ore.-based AWC, a vehicle-processing company that transports cars to dealerships.

Frantz — who was honored as one of *Computerworld*'s Premier 100 IT Leaders in 2005 — had established himself as an out-of-the-box IT executive after joining AWC in 1998. Among other things, he migrated much of his company from Windows PCs to Macs and engaged in a public dispute with Microsoft Corp. In fact, prosecutors cited the public accolades he had received to illustrate the level of trust he had achieved at AWC.

AWC itself told prosecutors that "Dale Frantz was a trusted senior leader" whose opinions "were given high priority in terms of expenditures, operations and business strategy.

But Frantz was more than a CIO: He led a double life as an incompetent thief who stole from three companies and was caught each time, according to court records.

"I have struggled with stealing throughout most of my adult life," he wrote in a letter to Judge Bryan.

In 1991, Frantz was fired from his job at Great Lakes Chemical in Indiana for selling computer equipment he had purchased with company funds.

Frantz then landed a job at Pro Audio in Indiana, which later discovered that over an 18-month period, he had deposited $200,000 in a personal account even though his annual salary was less than $32,000. Frantz was convicted of theft and sentenced to four years in prison.

After his release from prison, Frantz made "repeated promises that he was a changed man," prosecutors said. AWC then "decided to give Frantz another chance."

While he took AWC in new IT directions, he couldn't do the same with his life. He continued to steal.

An audit by AWC last year uncovered his crimes there.

Officials confronted Frantz, who tried to convince them not to report him to authorities, contending that prosecuting him would end any possibility that the company would get its money back, prosecutors said.

After he was charged with fraud in June, Frantz promptly pleaded guilty.

"I was relieved on the day I was terminated from AWC," Frantz wrote to the judge. "It meant that the double-life of 'successful executive' and 'embezzler' was over." ◆

Robert McMillan *of the IDG News Service contributed to this story.*

> **I have struggled with stealing** throughout most of my adult life.
> DALE FRANTZ, FORMER CIO, AUTO WAREHOUSING CO.

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THE Grill

Tom Ryan

This educator-turned-CIO champions technology's role in learning.

Favorite technology: I'm really intrigued with iPad-esque devices and what they can do.

What were your favorite subjects in high school? Football and wrestling. I came from one of those disadvantaged families where school was more of a social thing rather than a place to get to the next level.

What's your favorite thing about students today? I see kids who do some remarkable things. They're so in touch with the technology. They use the tools in ways that don't even occur to me.

If you could have only one computerized device, what would it be? Probably my laptop. There's more functionality on my laptop than on most of my other devices.

ALBUQUERQUE *Public Schools CIO Tom Ryan believes IT can do more than help teachers and administrators; he says technology has the power to actually transform how schools teach and how students learn. A former teacher and principal, Ryan is putting that belief into practice. As CIO of the largest K-12 district in New Mexico, with 139 schools and nearly 90,000 students, Ryan delivers IT services to the district's administration and teachers. He advocates for an education system where technology doesn't merely deliver content electronically but creates a new standard of individualized learning available 24/7 to teachers as well as students, their families, guardians and mentors.*

Continued on page 14

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> **We need to open up access to [education] resources 24/7.** We have that ability through technology.

Continued from page 12

What are your key responsibilities as CIO of a school district? My primary job is to help support the core mission of education: to improve teaching and learning for all kids. And I run the business systems for the district. We run operations, security, computer repair. I'm also responsible for online learning and the tools that we use to support training.

It's also the CIO's responsibility to understand how the business transforms itself through the use of technology and not [have] the functionality side of the business telling IT what it needs. My teachers' and principals' job is teaching kids, not going out to look at technology. That's my job.

How did you build your team? Since I have a background on the education side and understand some of the needs we're trying to fulfill, I make sure I have direct reports who have expertise in networking, data center operations and the other IT-related business functions we're trying to support. And typically the people who come into education do so because they have a passion about doing something significant, leaving a legacy, benefiting a community. And those values drive people to do great things. The people I have are dedicated to the work we do and the value we bring to the community.

What technologies make online learning successful? Technology doesn't make education successful. We went through a period of education 10 or so years ago where there was a "build it, and they will come" mentality. But good teaching increases education achievement, and if we come at it from that perspective, then we can provide resources to help assist teachers and administrators to do their jobs more effectively and efficiently.

So what we've found is, the best technology can increase student access to high-quality teaching and learning resources. In a traditional school, a brick-and-mortar school, it's open about 180 days a year for about seven hours. I think that's a legacy model school. We need to open up access to resources 24/7. We have that ability through technology. Not that technology will teach you, but access — access to resources, access by parents to help you — will help improve student learning.

What's the hardest part of providing technologies for a range of ages and aptitudes? The biggest challenge I have is understanding what a teacher's need is and providing the right transformative technology. And when we find those things, it's helping them find the value. The next challenge is bridging where they are now to where they could be if they use the technology well. You don't want to pull them out of their time with kids, so finding the time to get them really skilled at these technologies is a challenge.

How do you manage those challenges? We just passed a $130 million capital investment by our community back in February, and we really emphasized that any technology we're purchasing and that teachers will be using has to be aligned with an intensive, integrated professional development program to make sure the investment in the technology isn't wasted because it's not being used.

How do you ensure that adoption? There's always a core group of innovators willing to lead a little bit on those initiatives. Some might call it a pilot group. What we've learned is to invest in that group, because they're really doing the work. With our interactive whiteboards, we first delivered 500. You could apply to be one of the 500, but if you're going to be part of this, you're going to have to give up two days for professional development. So you build up some momentum from that first 500, and then when we deploy the next 500, you still have some momentum. We try to build the desire to have these systems and improvements versus putting the investment across to everyone and having to deal with the resistance.

Do you find that the resistance is gone by the end of a rollout? No, there's always a group of people who don't want to change. That's probably healthy — you don't want to jump on every new thing, and those people keep you from doing that.

What's the future of technology in education? As folks start to see that technology isn't replacing teachers — that it's not *delivering* education — we'll see the "disruptive class" idea, where students will take advantage of online courses, and resources are available all the time. But I'm not sure public education is up to the task, because the people who are most successful in the legacy model of education control it, and they don't want it to change. Those who are least successful in it are the poor and the people of color, and they have the least influence to change it.

– Interview by Computerworld *contributing writer*
Mary K. Pratt *(marykpratt@verizon.net)*

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PRESTON GRALLA

Your New IT Job: Twittering in the Cloud?

> The IT job of tomorrow will likely focus on social networking, cloud computing, and strategic use of smartphones and tablets.

IF YOU'RE in IT, you've spent a lot of time developing job skills such as handling the intricacies of Exchange, working on enterprisewide deployments and upgrades, and managing data centers.

If a new report is to be believed, you can say goodbye to all that. The IT job of tomorrow will likely focus on social networking, cloud computing, and strategic use of smartphones and tablets. And it's coming a lot faster than you think.

So says a recent IDC report, "IDC Predictions 2011: Welcome to the New Mainstream," which concludes that in 2011, long-established IT platforms will start to be replaced by one built on cloud services, mobile computing and social networking.

In the words of IDC analyst Frank Gens, "In 2011, we expect to see these transformative technologies make the critical transition from early adopter status to early mainstream adoption. As a result, we'll see the IT industry revolving more and more around the build-out and adoption of this next dominant platform."

It's easy to dismiss such talk as trendy twaddle. It implies that beginning in 2011, you'll spend more of your time twittering in the cloud and less time doing real work. Nothing, though, could be further from the truth — the transformation will be very real. And that's good news, because it means you'll spend more of your time on strategic projects and less time on grunt work.

Let's look at the elements of the new platform, starting with social networking, which IDC calls "social business software." As you might imagine, social business software is about more than tweeting and catching up with your friends on Facebook. The most obvious part of an enterprise's use of social networking will be outward-facing, including engaging with potential and existing customers and business partners. But a potentially larger part will be using the elements of social media such as blogs, online discussions and wikis to help employees collaborate on projects, share information and easily find and tap into internal expertise. IT will need to help develop a platform — perhaps based on tools from start-up Jive Software — for doing all of that. And it will need to integrate outward-facing and inward-facing social networking tools.

As for the cloud, this may have the greatest day-to-day impact, freeing IT folks from the low-level nitty-gritty work of keeping a data center and its servers running, and focusing more on figuring out ways to match an enterprise's application suite to its business goals. The IDC report says that up to one-third of all midsize businesses will adopt some cloud-computing resources by the end of 2011 and adds that "spending on public IT cloud services will grow at more than five times the rate of the IT industry in 2011."

The third leg of the new platform, mobile computing, is already here with a vengeance: IDC expects that more smartphones and tablets will be sold than PCs over the next 18 months, and after that, "there will be no looking back." Increasingly, those devices will become the primary way that many people interact with an enterprise's computing and data resources, and it will be IT's job to make sure it's done in the most efficient, productive and secure way. Welcome to the world of Droids, iPads and beyond.

Change can be hard, but the emergence of this new platform is good news for IT, which will become more closely aligned with the core business. In the long run, that's not only more satisfying; it means more job security as well. ◆

Preston Gralla is a contributing editor for *Computerworld.com* and the author of more than 35 books, including *How the Internet Works* (Que, 2006).

the cloud is the answer.
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Building an internal cloud isn't easy, warns a veteran IT analyst.

THE Bumpy Road TO PRIVATE CLOUDS

You'll need new tools and procedures. **BY BILL CLAYBROOK**

COVER STORY

WHEN WE FIRST HEARD about cloud computing, public clouds got most of the attention. But as IT managers looked at the security risks of having data outside the corporate firewall, they turned their attention to private clouds, which analysts and various surveys suggest will get more enterprise investment in the next few years.

But private clouds have their share of challenges too. There are management issues and operational processes to figure out. And, of course, an on-premises private cloud needs to be built internally by IT, which takes time, money and a climb up the learning curve. Indeed, the transition from a traditional data center — even one with some servers virtualized — to a private cloud architecture is no easy task, especially given that the entire data center won't be cloud-enabled, at least not right away.

(While we generally think of a private cloud as being inside a company's firewall,

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a private cloud can also be off-premises — hosted by a third party — and still remain under the control of the company's IT organization. But this article is only about on-premises private clouds.)

Also, despite the hype you might hear, no single vendor today provides all of the software required to build and manage a real private cloud — that is, one with server virtualization, storage virtualization, network virtualization, and resource automation and orchestration. Look for vendors to increasingly create their own definitions of private cloud to fit their product sets.

Moreover, you'll have to determine whether your staff has the experience and skills required to support a private-cloud environment, or whether you need to hire someone who has been involved in building private clouds.

Not a Traditional Data Center

Many IT managers equate a private cloud with virtualization. What they describe is usually virtual infrastructure, meaning that "you can treat your servers, storage and networks as a single pool of resources that workloads can request on demand," explains Tony Iams, an analyst at Ideas International Ltd., an IT research firm.

But virtualization and the cloud aren't the same thing; to be considered a cloud, the architecture must be set up to provide resource orchestration and automation on top of the virtualization layer.

Orchestration is the coordinated delivery of many types of resources, such as processors, storage and networks, to provide an integrated provisioning process. It means that resources can be delivered in minutes rather than days or weeks. A single command or request causes a number of actions to occur, possibly in a specific sequence, to coordinate the provisioning request.

The whole point of a private cloud is to allow IT managers to reduce costs and provide so-called agile provisioning rather than just making management of the infrastructure more convenient. A private cloud with virtualization underpinnings turns the technology infrastructure into a pool of resources that can be provisioned on demand with minimal manual labor.

In a traditional data center setup, "every time you add a server, somebody has to walk to a firewall console, set up firewall rules, attach the server to a VLAN, set up load balancing" and do many other tasks, explains Jeff Deacon, cloud computing principal at Verizon Business, a unit of Verizon Communications Inc. that provides managed services. But a private cloud needs little human intervention other than bringing in new computers or storage to keep up with demand. In a cloud environment, there is one console that lets operators set parameters to automate the entire process, rather than requiring IT personnel to log into different consoles for security, networking and server operating system functions.

Another big difference between private clouds and traditional data centers involves IT processes, which probably need to be revamped for a private cloud. Today, for example, to provide computing resources, IT organizations typically have to get budget approvals, discuss the implications with storage, network and server groups, and fill out tons of paperwork. This type of process is in stark contrast to the streamlined, short-duration provisioning done in clouds. The time-to-provision may go from weeks in the traditional data center to minutes in a cloud.

The systems running older applications may need an overhaul too, if they're based on mainframes and proprietary Unix platforms. Most virtualized environments, including private clouds, are geared to run on x86-based systems. Also, in a virtualized environment, you generally don't know exactly where an application is running at any given time. Because most legacy applications are tied to a specific platform, running them in a private cloud will often require re-architecting them.

Divorcing applications from the hardware is a hallmark of clouds, including private clouds. In a traditional data center, you might have 10 servers running billing applications, and five other servers running customer data apps. But with a private cloud, it's not known ahead of time which servers will run which specific applications. The applications run on whichever servers have free cycles at the time the apps need to run.

Private clouds involve two groups of people: the IT operations staff and the business users who want to run applications. A private cloud gives business users the opportunity to

Are You Ready?
PROBABLY NOT

Forrester Research estimates that only 5% of corporate IT shops are really ready to offer private cloud service. A recent Forrester report by analyst James Staten says that your IT operation is "cloud-ready" if:

- You have standardized procedures for the deployment, configuration and management of virtual machines.
- You have turned over the deployment and management of virtual machines to automated tools.
- You provide self-service access for end users.
- Your business units are ready to share the same infrastructure.

Before moving toward private clouds, IT shops must become even more efficient at server virtualization. Most IT departments lack consistent procedures for tracking the deployment, usage and ownership of virtual machines; that leads to "virtual machine sprawl," which will cancel out the economic savings of a private cloud, Forrester says.

IT shops also need to learn to manage the entire pool of virtualized servers rather than single virtual machines or workloads, the report adds.

Once your virtualization house is in order, Forrester suggests the following steps to get started with a private cloud:

- Begin with noncritical workloads to show that it works.
- If a business unit is willing to invest in cloud computing, set up a brand-new cloud environment just for them.
- Get executive support — actually, a mandate — so that business units will share the pool of virtual resources.
- Show the benefits, such as dramatically faster deployment and lower costs.
- Embrace public clouds that can supplement your internal cloud.

— MITCH BETTS

quickly provision a server and run an application when they want to, without human intervention.

The IT operations staffers have to make sure that sufficient resources are available for the type of on-demand computing that business users have heard is available with public clouds, and that usually means that the wait for user-requested resources is minutes, not days. Anything short of this, and end users won't be happy.

This is what private clouds are all about: providing the on-demand elasticity of public clouds, but doing it within the company's firewall.

By the way, business users may expect private clouds to act like public clouds. In a public cloud, the public cloud provider's IT operations group is responsible for the computer infrastructure, and the customer's business application groups manage and monitor their own applications on the public cloud. If the private cloud is expected to operate in a similar manner, then the IT group may need to give up its traditional application-management role.

Getting Started

The first step down the path to a private cloud is to go beyond server virtualization. Iams outlines these subsequent steps:

- Virtualize your storage and try to achieve the same flexibility with storage that you already have with virtualized servers.
- Coordinate server virtualization and storage virtualization using management tools such as Microsoft Corp.'s Windows Azure Storage or VMware's vStorage.
- Virtualize your network infrastructure and, again, coordinate that with your management tools.

You know that your infrastructure has been fully virtualized when you have server virtualization, storage virtualization and network virtualization. The crossover point from a virtual infrastructure to private cloud comes when you have the management tools that treat all three types of resources — servers, storage and networks — as a single pool that can be allocated on demand.

Of course, all this is from a technology point of view. Iams says that there is a parallel set of steps from the organizational perspective, including people, processes, governance, policy and funding. One key question: What does a private cloud structure do to budgets and financial flow within an organization?

Public clouds require users to pay only for what they use. Because a private cloud doesn't provide users with a fixed amount of capacity like they may have had with a traditional data center, chargeback is almost certain to be an integral part of private cloud environments. Chargeback is a way of rationing computing resources, which is especially important when obtaining resources is as easy as filling out a Web form.

Paul Cameron, head of enterprise services at Suncorp Group, a major financial services provider in Brisbane, Australia, says that when his company began planning its private cloud, it created a service-based operating model and a service catalog. The service catalog contains the list of services being automated for internal use and is available to business users via a self-service portal.

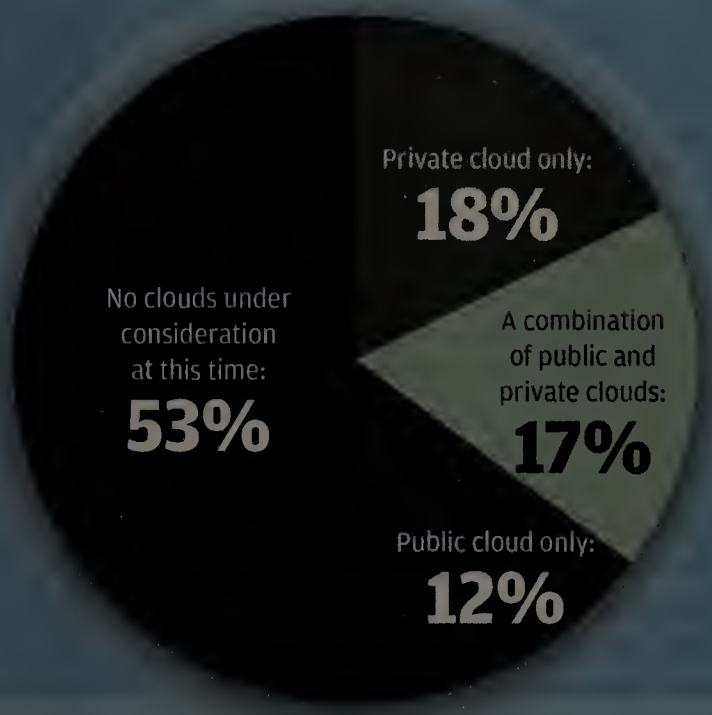
A key to building that catalog was storing information about Suncorp's assets and business application relationships in a configuration management database (CMDB). All of Suncorp's major IT processes — incident, problem, asset and change — use the CMDB.

Populating a service catalog can be time-consuming. But if you're using IT service management and change management

Pros & Cons

What kind of cloud computing are you planning or implementing?

Base: 155 IT managers



What do you see as the advantages of private clouds over public clouds?

1	Better security/control
2	Self-service provisioning
3	Little or no learning curve for end users
4	Better or more-efficient scaling

What do you see as the drawbacks of private clouds compared to public clouds?

1	Having to build it all internally: time, cost, learning curve for IT
2	Scalability
3	Having to handle virtualization, automation and orchestration

What's the most challenging part of implementing a private cloud?

1	Software licensing/pricing issues
(TIE)	Finding tools to help us build our cloud
(TIE)	Ensuring economies of scale
4	Finding tools to help us manage our cloud
5	Making it all work together (interoperability)
(TIE)	Technology obsolescence
7	Lack of cloud standards

Base: 54 respondents planning or implementing private clouds; multiple responses allowed.

SOURCE: *COMPUTERWORLD* ONLINE SURVEY, NOVEMBER 2010; RESEARCH ASSISTANCE PROVIDED BY MARI KEEFE, EDITORIAL PROJECT MANAGER.

tools such as BMC Software Inc.'s Remedy product line or Service-now.com and have a CMDB in place, it can be easier. You can work through the appropriate services in the CMDB to provide the automated services listed in a service catalog. This is what Suncorp is doing with its BMC Remedy-based CMDB.

Cameron says that Suncorp deployed a private cloud to provide better and faster IT provisioning to business users. Suncorp users can go to a self-service portal and request resources and services. Once the requests are made, the fulfillment of these services is automated. Cameron says that about 80% of Suncorp's data center services are now covered by automated self-service portals.

While private clouds are pitched as ideal for companies concerned about security and regulatory compliance, Cameron cautions that private clouds force implementers to rethink how they do security. For example, traditional firewalls won't always provide satisfactory security in cloud environments where workloads can be moved around to less-secure portions of the network. So Suncorp is now virtualizing its firewalls.

Industry Players

Here's a sampling of vendors that claim to have tools for building private clouds.

- **BMC Software Inc.** (Cloud Lifecycle Management)
- **CA Inc.** (3Tera AppLogic)
- **Cisco/EMC/VMware** (Vblock)
- **Citrix Systems Inc.** (Citrix OpenCloud)
- **Cloud.com Inc.** (CloudStack 2.0)
- **Dell Inc.** (Virtual Integrated System)
- **Enomaly Inc.** (Elastic Computing Platform)
- **Eucalyptus Systems Inc.** (Eucalyptus 2.0)
- **Hewlett-Packard Co.** (BladeSystem Matrix)
- **IBM** (CloudBurst)
- **NewScale Inc.** (NewScale 9)
- **Platform Computing Corp.** (Platform ISF)
- **Tibco Software Inc.** (Tibco Silver)
- **VMware** (vCloud)

SOURCE: FORRESTER RESEARCH INC., AUGUST 2010

Keeping Up With Demand

Jeffrey Driscoll, a systems engineer at consultancy Precision IT Group LLC, says the basic building blocks of a private cloud are servers, storage (such as a SAN) and virtualization software. "Then you start building a cluster," he says, and after that cluster is complete, "capacity planning becomes critical."

Capacity planning involves figuring out what happens when you add servers and other resources to the cluster as needed to keep up with business demand. Capacity planning is a major component of the cluster and the cloud's performance. If it's done wrong, you might end up with useless systems or have to shoehorn-in traditional, noncloud systems to keep things running.

Most organizations aren't good at monitoring and keeping ahead of capacity. To be able to satisfy user demands, you always need to have some extra capacity on the data center floor, which results in a certain amount of hardware sitting around in idle mode. Keeping a history of capacity usage in your enterprise can help you be reasonably confident that you have sufficient — but not too much — capacity.

One solution is to create a hybrid cloud environment and move requests for capacity to public clouds, such as Amazon.com Inc.'s Elastic Compute Cloud, when capacity isn't available in the private cloud.

Once the cluster is up and running, you can start provisioning virtual servers. The result is a tiered architecture with a server layer, a network layer and a virtualization layer. There is a management tool at each layer. "Now you can start thinking about automation," Driscoll says.

You'll need to acquire management tools that can bridge the physical infrastructure and the virtual infrastructure. So choose tools that let you see the same view across execution environments.

One layer of management is the infrastructure, which includes managing virtual machines, storage, backup/recovery and so on. While vendors often claim that their products are targeted at private cloud infrastructures, they sometimes use a very loose definition of "cloud," so carefully investigate the functions of each product.

The second layer, service-level management, involves managing workloads at a level of abstraction above virtual servers. This is where automation is applied. It is also where traditional management tools such as IBM's Tivoli and Hewlett-Packard Co.'s Insight work within the private-cloud stack. Vendors that claim to have automation management tools include IBM Tivoli, HP, CA, LineSider Technologies, DynamicOps, VMware and BMC.

Iams says that almost all system and hardware vendors are pursuing some type of virtualization or cloud management tools. Microsoft's System Center management product, for example, offers visibility into hypervisors and virtual servers.

But Iams says you should plan on managing multiple hypervisors, such as VMware's ESX, Microsoft's Hyper-V, the open-source Xen, and various implementations of the Linux KVM (Kernel-based Virtual Machine). Microsoft can manage Hyper-V virtual servers and some aspects of ESX virtual servers. Other cloud vendors, such as VMware and Red Hat Inc., can also manage virtual machines created by multiple hypervisors. Ideally, you want to control multiple hypervisors from a single interface.

Buy or Build?

The downside of commercial, off-the-shelf tools is that they will likely need to be customized to work with your environment. On the other hand, the downside of rolling your own tools is that your in-house IT group will need to maintain them and make feature enhancements. One alternative to homegrown tools is building mixed-component cloud stacks by acquiring various third-party components and putting them together. The question then becomes: Who do you call when there's a problem?

You could choose to go with a single provider, such as Microsoft or VMware, but that can result in vendor lock-in.

Open-source software — from the OpenStack project and from vendors such as Abiquo, Cloud.com, Eucalyptus Systems and Red Hat — is a good choice for building private clouds. The software is essentially free and provides more flexibility than proprietary

software licensed on physical CPUs. For example, proprietary software can create difficult licensing issues when migrating virtual machines from host to host.

Each alternative has its pluses and minuses, so weigh your options carefully, because switching gears once you're already under way is expensive and time-consuming. Don't lock yourself into a single vendor's cloud stack. In particular, avoid vendors with cloud stacks that perform well when using only their components. Reserve the option to plug in third-party or homegrown tools.

So far, it isn't possible to buy one commercial product that will do everything IT managers need to do for private clouds. You have to stitch together a number of different products from various vendors and place your own user interface on the front end.

But Verizon Business' Deacon says that more-sophisticated enterprises are integrating multiple management tool sets — for instance, HP's Server Automation suite and BMC's Patrol suite. Security, firewall, networking and storage elements can be orchestrated from within both HP and BMC suites. IT shops that don't link multiple tool sets may have to write a lot of their own software to get the necessary automation capabilities.

Is single-console management a real possibility for private clouds? Not everyone will be able to get by with just one console, says Iams, but even two or three consoles would be a huge improvement over the dozen that some shops use today.

Deacon says that single-console management is in the cards, noting that Verizon Business has built a high-level console management layer that collects data from VMware vCenter Server, HP Network Automation and HP Virtual Connect, among other products.

> **We may be able to bring private cloud management tools together, but it will be a messy interim period.**
>
> **FRANK GILLETT,** ANALYST, FORRESTER RESEARCH INC.

Vendors Will Consolidate

Frank Gillett, an analyst at Forrester Research Inc., isn't so optimistic. "It is unrealistic to think that we are going to get many of these management tools to work together," he says. Instead, he predicts that over time, the market will shrink dramatically through acquisitions, leaving a handful of vendors that will offer "much more integrated capabilities." And some IT managers prefer large, established vendors for cloud technology because they can't trust their data centers to start-ups that may not be in business in a year or two.

Deacon agrees that consolidation is likely as large companies like HP and IBM buy up cloud-based start-ups and add the new software to their existing portfolios. That's what HP did with its acquisition of OpsWare. Similarly, BMC absorbed BladeLogic, and CA has been on a buying spree, acquiring Nimsoft, Oblicore, 3Tera and others.

IT shops need federation and interoperability, Gillett adds, "and we are very early in those efforts. We may be able to bring private cloud management tools together, but it will be a messy interim period."

Yet during that period, IT shops will be under enormous pressure from business users to engage in cloud computing. If the data center operations group can't respond quickly with a private cloud, then business users will look at public clouds. To successfully compete with public cloud providers, IT departments will need to deploy similar services in-house, and those private clouds will have to be better and more attractive to use than public clouds. ◆

Claybrook, *an analyst with more than 30 years of experience in the computer industry, is president of New River Marketing Research in Concord, Mass. Contact him at bclaybrook@comcast.net.*

Storm Clouds ON THE HORIZON

Building your own private cloud involves some challenges, including the following:

■ **BUDGET.** Private clouds can be expensive, so figure out the upper and lower bounds for your return on investment.

■ **INTEGRATION WITH PUBLIC CLOUDS.** Build your private cloud so you can move to a hybrid model if you need public cloud services. This will involve making sure systems are secure and verifying that you can run your workloads in both places, among other things.

■ **SCALE.** Private clouds usually don't have the economies of scale that large public-cloud providers provide.

■ **ON-THE-FLY RECONFIGURATIONS.** You may have to tear down servers and other infrastructure — while it's still in use — to move it into the private cloud. This could create huge problems.

■ **LEGACY HARDWARE.** Leave your oldest servers behind. Don't try to repurpose any servers that require manual configuration with a private cloud, because it would be impossible to apply automation and orchestration management to these older machines.

■ **TECHNOLOGY OBSOLESCENCE.** The complexity and speed of technology change will be hard for any IT organization to handle, especially smaller ones. Once you make an investment in a private cloud, you need to protect that investment by staying up to date with new releases of software components.

■ **FEAR OF CHANGE.** Your IT team may not be familiar with private clouds, and there will be a learning curve. You may need to create some new operational processes and rework some old ones. Turn this stressful situation into a growth opportunity for your staff, reminding them that these are important new skills in today's business environment.

— BILL CLAYBROOK

Teamwork
FOR TECHIES

Bye-bye, lone programmer. Here's how to get far-flung IT professionals to collaborate.

BY TAM HARBERT

COLLABORATION is all the rage among corporate executives these days, which means IT is busy providing systems that turn that vague concept into a real business benefit. But what happens when it comes time for techies themselves to collaborate?

IT folks carry the stigma of being particularly noncollaborative, but the stereotype of the loner programmer barricaded in a cubicle is not necessarily accurate. "It depends so much on the organization that you work in," says Jeffrey Hammond, an analyst at Forrester Research Inc. Many IT departments have not valued collaboration, operating instead in a command-and-control fashion that stifles the col-

© FOTOLIA / JOGGIE BOTMA

laborative skills of their employees, he says.

That could be a problem, because effective collaboration is increasingly seen as an imperative throughout the enterprise, including IT. As IT departments are downsized, with low-level tech jobs outsourced or replaced by managed services, the remaining staffers — who are often dispersed throughout the world — must not only work more closely with business units, but also share knowledge with one another to avoid having to continually reinvent the wheel.

The good news is, their prickly reputation notwithstanding, IT employees can be as collaborative as anybody else, Hammond says. Here's a look at some companies that have had success in tapping the power of IT collaboration.

Applied Materials: Changing a Top-Down Culture

Applied Materials Inc., a $5 billion semiconductor equipment manufacturer based in Santa Clara, Calif., is a classic example of a company working to shift the way its IT employees interact.

In the past four years, Applied Materials has completely overhauled IT, with the goal of cutting costs, improving service levels and driving business transformation.

CIO Ron Kifer has reduced the IT workforce from 580 full-time employees in 2006 to about 250 today, outsourcing much of the commodity-type work. The remaining employees are charged with focusing on strategic initiatives that add value or produce revenue.

Recently, the IT organization switched from operating as several different independent regional departments to functioning as one global IT team, says Jay Kerley, corporate vice president and deputy CIO, who has overall responsibility for IT operations. (Kifer focuses on business transformation.)

IT staffers "have to be able to collaborate in near-real-time," says Kerley. "They have to know how to engage with customers in a global, multi-time-zone operation."

That meant changing from command-and-control management to "matrix-style management," which aims to solve problems by bringing together people from across the IT organization, regardless of their position in the hierarchy, he explains.

To successfully effect that change, Kerley felt he needed a baseline model of current communication patterns. So earlier this year, he surveyed IT staffers, asking them to name the people they went to when they needed information, feedback and advice on ideas, or help with projects.

The answers produced a map of interactions that illustrated that communication was happening along traditional chains of management but also among people who were serving as hubs of collaboration. About half of those "highly networked individuals," as Kerley calls them, were the managers you'd expect to be consulted, but the rest were rank-and-file workers that people felt comfortable asking for help.

He brought 12 of those people together to discuss how to encourage a matrix style of collaboration. The team agreed that some IT staffers were inhibited by language and cultural barriers and others by a lack of confidence or leadership skills.

For example, although English is spoken throughout the company, some workers for whom it's a second language might not understand certain jargon or colloquialisms. And Japanese employees sometimes wouldn't speak their minds in meetings because the concept of openly debating ideas is foreign to their traditional management culture, says Kerley.

To address those communication barriers, the company provided personal coaching for its entire staff, including all 250 IT employees. "We talk about their careers, the changes in the [work] environment and how they can be more effective [collaborators]," says Kerley. "And we reinforce the fact that these changes are here to stay and they have to adapt to them."

The company also launched a leadership development program in which groups of 40 IT employees are mentored by Steve Finnerty, a former CIO now on staff at Applied Materials. (The company plans to cycle all IT employees through the 10-month program.)

The goal of the leadership development program is to train IT employees to work with one another and with people in other business units to achieve common goals. The company also makes sure to recognize particularly successful collaboration, giving awards to those who "exemplify core values of matrix collaboration."

In addition, Applied Materials has made changes to become less U.S.-centric and more sensitive to the needs of international employees. It started an optional program, called Applied Anywhere, which equips employees with tools that enable them to work from wherever they are.

One goal is enabling communication among global employees without tipping their work/life balance out of whack, says Kerley. Applied Materials employees in India, for example, no longer have to go back to the office at 9 p.m. to participate in webconferences or teleconferences scheduled during regular working hours at the company's California headquarters. With Applied Anywhere, they can log in from home.

The most recent communication survey, taken just six months after the baseline survey, already shows improvement, says Kerley. "We're seeing a change in

5 Ways to Foster Collaboration

Define the goal of collaboration and explain the benefits.

Highlight how collaboration helps employees handle their own workloads.

Recognize and reward effective collaboration.

Provide tools that are easy to use, that perhaps even mimic consumer technologies such as Facebook. The tools should require little or no training, so employees can just jump in and use them naturally.

Garner the support and encouragement of top management.

— TAM HARBERT

A recent survey of more than 500 executives, IT decision-makers and business unit leaders worldwide found that businesses are trying to enable greater collaboration across their workforces.

More than 80% of the respondents to the survey, sponsored by systems integrator Avanade Inc., said they believe that enterprisewide collaboration is a key to business success. Three quarters of the respondents said that they plan to increase their use of communication and collaboration tools in the next year.

Why all the emphasis on collaboration? Markets are becoming more dynamic, product adoption rates are accelerating, and innovation cycles are getting shorter, says Markus Sprenger, director of information management and collaboration at Avanade, which is jointly owned by Microsoft Corp. and Accenture PLC.

In the midst of those changes, corporations are finding that their traditional management structures aren't able to keep up.

"Our clients are having to change their organizations, moving away from hierarchical structures where people do repeatable tasks to a more matrixed organization where people come together to solve problems as projects," says Sprenger. "Everybody is a part of two or three different teams and has several jobs."

– TAM HARBERT

how interactions happen" — and even once-reticent Japanese employees are now actively participating in brainstorming sessions, he says.

A New York Hedge Fund: A Wiki for the Common Good

When Mark joined a large New York hedge fund last year as a manager of technology, he was flummoxed when he tried to locate information about the firm's software applications. (Per his employer's policy, Mark asked that neither his full name nor the company's name be used.)

The hedge fund's IT staff of 70 was fragmented into more than a dozen different groups, and each group maintained information on its own systems. That information could be stored anywhere, including one person's e-mail in-box. "I would send an e-mail asking for documentation, and I'd get four different responses with four different versions," he says.

Mark had used a wiki to consolidate such information at his previous employer, so he decided to try it at the hedge fund. One problem: The wiki would be useful only if everyone contributed, but he didn't have the authority to make everyone do that. He supervised only five of the 70 people on the IT staff.

So he used the combination of a carrot and a stick. First, he and his staff built the wiki and filled it with some basic content, establishing a consistent format and structure. For each application, the content included contact information for the vendor, which version of the software was installed, and start-up and shutdown procedures.

Next, Mark explained the reason for the wiki to the two managers who directly reported to the CIO and asked for their support. He convinced them to mandate that their teams put all of their documentation in the wiki and make its use an evaluation point in their employee reviews. That was a powerful incentive, Mark says, because bonuses can make up anywhere from 10% to 50% of a hedge fund employee's take-home pay — even for IT staffers.

But more important, IT employees flocked to the wiki because it was so useful to them. "They realized the weakness of the previous system, where nobody knew where the documentation was," he explains. "They were glad someone took the initiative to do this." Bottom line: With just a bit of prodding, most of the IT staff was willing to collaborate, especially once they understood the goal and how it would ultimately help them.

The wiki, which has been in place for almost a year, has become "one of the IT department's most important systems," Mark says. "Now it has a special section in the disaster recovery plan. It's one of the first systems that we have to bring up, because it has all the supporting information for all of our applications."

SAS Institute: Bringing Subsidiaries Into the Fold

Fostering global collaboration can be especially dif-

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ficult when your international IT staff doesn't report to headquarters.

That's the situation at business analytics vendor SAS Institute Inc. The $2 billion company has 550 IT employees — about 350 at its Cary, N.C., headquarters and another 200 spread among subsidiaries worldwide. Each subsidiary is a separate legal entity with its own management and its own IT staff that's free to set up systems in whatever way supports their local workforce best. That can mean a lot of IT people reinventing the same wheel, says Mark Filipowski, a senior IT project manager in Cary.

So in 2007, SAS launched a worldwide IT collaboration program to foster open communication among those scattered IT employees, identify and reduce duplication of effort, and increase efficiency, says Filipowski, who also serves as worldwide IT liaison for the program.

The program consists of a series of meetings — usually via teleconference or Web-based videoconference — among IT employees who share common interests. There's a leadership meeting of about 15 IT managers every six weeks, and quarterly meetings of various technical specialists, such as those involved with networking, virtualization or storage.

The groups use Microsoft Corp.'s SharePoint to plan meeting agendas — individual participants are asked to post information on current projects and their status — and to publish reports about the meeting on the corporate intranet. "Those meeting reports are probably one of the most important resources in the IT department," says Filipowski, because they serve as repositories of information about all current projects and their statuses.

The meetings aren't mandatory, since IT staffers at subsidiaries report to managers at their local offices, not to central IT. But most IT employees are eager to participate, says Filipowski.

Indeed, Koen Vyverman, manager of technical support and IT/MIS in SAS's Netherlands office, says participating in the meetings helps him feel less isolated.

More important, however, is the fact that the collaboration makes Vyverman's job easier. He and his staff of two support 130 people and 200 systems in the Netherlands office. "The only reason our small staff can handle that is because we collaborate [with other offices in Europe] and with headquarters in Cary," says Vyverman, who once won one of the two Worldwide IT Collaboration awards that SAS gives annually.

Kraft Foods: Cubicles Down, Collaboration Up

If collaboration can be encouraged in the virtual world by more effective use of online tools, it can be encouraged in the physical world by effective design of office space. Kraft Foods Inc., which prides itself on a culture of collaboration, is trying to foster even more collaboration, both online and in-person.

In the virtual world, the Northfield, Ill.-based company experimented with technology to enable its 1,800 IT employees worldwide to participate in its annual IT leadership meeting held earlier this year, says Lorraine Casler, director of enterprise content management for information systems at Kraft.

The meeting brought together leaders from the information systems department and the enterprise shared systems department to discuss strategy. Through an online collaboration center, employees were encouraged to contribute comments and ask questions during the meeting. The collaboration center also hosted blogs, podcasts and videos by attendees. About 40% of the attendees blogged and 10% posted videos or podcasts, according to a Kraft spokesman. An average of 1,000 IT employees followed those posts, he says.

To foster in-person collaboration, a couple hundred IT employees in the company's Northfield headquarters have moved into office space redesigned to promote interaction.

As part of its workplace transformation project, the company got rid of offices and cubicles and replaced them with a large open area with enclaves for meetings and private conversations. There isn't any assigned seating. Workers keep their personal belongings in lockers and any files or office supplies in rolling "footstools," says Casler.

> **[IT staffers] have to be able to collaborate . . . in a global, multi-time-zone operation.**
>
> **JAY KERLEY,** DEPUTY CIO, APPLIED MATERIALS INC.

The change was mandatory, and Casler acknowledges that some employees didn't like the new arrangement at first. "In the old command-and-control culture, the bigger your office, the more important you are," she says. But thanks to a careful change-management process and proper training and support, most employees settled into the new space.

She says that having managers out on the floor with employees rather than behind closed office doors has strengthened relationships. "Once you get over the fact that you don't have an office, you start feeling more engaged," Casler says.

As more and more companies encourage, or even mandate, collaboration, IT may finally put to rest the stereotype of the lone programmer. Forrester's Hammond says collaboration in high-performance development teams breeds success, in the same way that cooperation enables members of professional sports teams to win championships.

"If you put [IT employees] in a situation where there are other people that are as good as they are, then — bam! The collaboration just starts to happen," Hammond says. "It goes high-bandwidth." ◆

Harbert *is a Washington, D.C.-based writer specializing in technology, business and public policy. You can contact her through her Web site, TamHarbert.com.*

Corporate Santa Claus

Habitat for Humanity teams up with an IT asset recovery firm to get cast-off PCs to low-income families. **BY TODD R. WEISS**

Eliana Gomez (second from right) and her son Jacob and daughter Leticia received a Habitat PC that Redemtech volunteers Laurie and Chris Williams installed.

SINCE 1976, Habitat for Humanity has been helping low-income families across the U.S. build and buy affordable homes to help improve their lives and futures.

But today, despite having nice bedrooms, kitchens, living rooms and the rest, most of Habitat's houses are missing an essential 21st-century tool that's likely present in the homes of most middle- and upper-income families — a computer where family members can do schoolwork, learn new skills, pay bills and expand their horizons.

For many low-income families, just having a nice place to live is the answer to a lot of prayers, but E.J. Thomas, CEO of the Habitat chapter in Columbus, Ohio, didn't like the idea of a home without a computer. "Helping these families to be successful involves a lot of different things," he says. "Helping the children of those families to bridge the digital divide is hugely important."

Last year, Thomas' concern about homes without computers led Habitat to partner with Redemtech Inc., a Columbus-based IT asset recovery business that helps large companies recycle or resell their old computer equipment.

The three- or four-year-old machines that businesses cast aside as they cycle through IT "refreshes" often have plenty of life left in them. So Habitat and Redemtech have teamed up to refurbish pre-owned machines, equip them with licensed Microsoft Windows and Office software, and distribute them to Habitat families who have applied for them.

The program also includes in-home setup of the systems, 90 days of tech support, and computer training classes for the families.

"We don't just call everybody and say, 'Come in and get your computer,' " Thomas says. "The requirements are for people to come in and take some classes so we can be sure it's going to be used."

After a successful pilot project last year, the Columbus Habitat chapter and Redemtech have formalized the program and now are helping to expand it to Habitat chapters across the nation.

So far, about 75 Habitat families in the Columbus area have received free PCs, says Thomas.

What's currently not included is Internet access; the families have to obtain that on their own. However, Thomas says Habitat is trying to find services through which the families can receive free or low-cost Internet connections.

Eliana Gomez moved into her Habitat home in Columbus last December; it's the first home that Gomez, a native of Mexico, has ever owned. Her family also received a PC through the Habitat-Redemtech program, and she says that she and her three children find the computer extraordinarily helpful.

"My 8-year-old uses it more than anybody. He likes to do his homework on the computer. He knows how to use it, and he's teaching me sometimes," she says. "My daughter, she is 2, likes to play Dora on the computer."

Gomez says her family hasn't been able to afford Internet access yet, but the PC is giving her children opportunities that they didn't have before. And for her part, she says, learning to use the computer at home is opening doors to new opportunities at work. Her employer asked her to be a manager, and she's working on her computer skills to reach that goal, she says.

Companies that donate the old computers make more money through tax savings than they would by simply selling their unneeded equipment, says Robert Houghton, president of Redemtech. The companies making the donations pay Redemtech to refurbish and redistribute the equipment — at a cost that's lower than what they'd have to spend if they tried to donate the machines on their own, he says.

But beyond helping with tax breaks and making companies feel good that their old computer equipment is being put to good use, the bottom line, says Houghton, is that families are truly benefiting from the Habitat-Redemtech project. ◆

Weiss *is a freelance writer. Follow him on Twitter (@TechManTalking) or write to him at toddrweiss@gmail.com.*

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Security Manager's Journal

MATHIAS THURMAN

Buried in SIEM Configuration

The first rule in deploying a security incident and event management tool: Don't make assumptions.

I **MENTIONED IN** my previous column that in my new job, I inherited a project to implement a security incident and event management (SIEM) tool. In response, several readers e-mailed to tell me about their experiences. Here's what I've learned in tackling this project over the past couple of weeks.

There are a few different ways to use SIEM. It can alert you to anomalous behavior and malicious code. By pulling in data from our antivirus scanning management console, our patch management reporting tools and our DNS, DHCP, switch and firewall logs, SIEM can quickly alert us, for example, that a particular unpatched system is infected and even identify which switch port it is connected to. SIEM can also be an investigative tool, providing additional information when an intrusion-detection tool logs an event. And a SIEM tool can be used for asset management, detecting the addition to the network of things like unauthorized virtual servers or the activation of unauthorized services such as FTP.

But with SIEM, you get out of the tool only as much as you put into it, and you have to spend a considerable amount of time figuring out what exactly you want this new contraption to do for you. The failed SIEM deployments that I've seen were victims of poor planning.

The first rule to acknowledge is that you just can't make assumptions. For example, we assumed that by pointing the logs of our domain controllers to the SIEM tool, we would be able to obtain logs related to employees' log-in and log-off data. That didn't happen, and we ended up scratching our heads.

the discussions about security! **computerworld.com/blogs/security**

As it turns out, unless you've properly configured the audit policy setting on a domain controller, you're not going to see those logs. And Windows domain controllers offer 16 different options just for DNS logging.

The Cost Factor

Assumptions can also be costly. Many SIEM licenses are based on events per second. You may run into license limits and budget overruns later on if you find that you need to enable a bunch of logs that you had assumed you were already collecting. And, of course, you wouldn't have accounted for those newly enabled logs during rule configuration, which means you may need to revisit your rules. You can see how easy it is for a SIEM deployment to fail.

SIEM tools also require a lot of tuning. You have to build your rules with care, manage false positives and classify assets properly. We keep making some progress in these areas and then having to backtrack when we discover that we have made yet another assumption that needs correction. It's quite frustrating.

Take asset identification. We initially enabled the SIEM tool with default rules and discovered that we had about 35 DHCP servers, 60 DNS servers, hundreds of Web and FTP servers, and all sorts of devices claiming to be routers, mail servers and other types of equipment. It can be tough to get a handle on everything we have and what it's doing, especially with virtual machines seeming to spin up on an hourly basis and a plethora of third-party networks created as a result of partnerships, mergers and remote offices being connected to the corporate network.

A critical factor in our deployment planning is that I have only one analyst to administer, configure, manage and monitor the SIEM tool. That lack of human resources will greatly influence how we finally tune it. I hope that as time goes by, I'll be able to justify additional analyst head count and significantly expand the scope of our SIEM setup. ◆

This week's journal is written by a real security manager, **"Mathias Thurman,"** *whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com.*

"You have to spend a lot of time figuring out what exactly you want this contraption to do for you.

Trouble Ticket

» Hanging over a SIEM deployment is the knowledge that such projects fail fairly often.

» Tune the tool very carefully, keeping in mind that there's only one analyst available to administer, configure, manage and monitor the SIEM tool once it's deployed.

PAUL GLEN

The Pen Is Mightier Than the Code

> The most important thing you can do to ensure you have a vibrant career is to learn to write well.

Paul Glen is a consultant who helps technical organizations improve productivity through leadership, and the author of the award-winning book *Leading Geeks* (Jossey-Bass, 2003). You can contact him at info@paulglen.com.

AS WE APPROACH another new year, it's traditionally a time for looking to the future and laying the foundation for a better life. But it remains a tough time to plan for the future of a technical career. What can one do to ensure new opportunities and stability?

The one area I recommend focusing on is not the latest technical trend or managerial fad. The long-term success of your career isn't going to be determined by your prowess at agile mobile development or achieving CMMI Level 64. No, the most important thing you can do to ensure you have a vibrant career for years to come is to learn to write well. That's right: Mastering a 5,000-year-old skill offers the best prospects for remaining relevant in the 21st-century job market. Whether you are an executive, project manager or hard-core technologist, writing is the key to your future.

Why writing and not something more modern, technical or sexy? Although communicating effectively is important, it's not the only reason to learn to write well. The skills associated with good business writing will always be in demand. Good writing isn't really about good grammar or pretty words. It represents the culmination of a series of valuable business skills, ones you'll use constantly, even when you're not writing.

Thinking clearly. You cannot write about something without first thinking about it clearly. For me, writing is the process of being confronted by my own ignorance. It forces me to think carefully about my subject. A first draft is primarily an exercise in exposing the limits of my understanding of my own ideas. And editing that first draft involves far more than fixing typos; it is an exercise in clarifying thoughts. In a world full of half-baked, hype-infused concepts, clear thinking is a rare and valuable commodity.

Considering the audience. In addition to encouraging you to think clearly about the subject you are addressing, writing well requires consideration of the audience you want to communicate with. You need to adapt your style to their language, culture, interests and concerns. Good writing has coherent goals for what the author wants the audience to think, feel or do and is designed to fulfill those goals. Good *business* writing is not about self-expression, but about moving an enterprise forward. Moving other people is a key business skill regardless of your position.

Demonstrating understanding. One of Stephen Covey's famous habits of highly effective people is to "seek first to understand, then to be understood." But in building business relationships, just understanding is not enough. We need to demonstrate our understanding of those we engage with. They need to know that we really understand them. Good writing *demonstrates* the author's understanding of her audience, echoing their ideas, concerns and feelings. Because one of the most common complaints from business people about us is that we don't understand them, we need to make a special effort to do this.

Being understood. Of course, good writing leads to being understood by the audience. But writing well requires that all the other skills be applied to create that understanding. If you can't make yourself understood, it doesn't really matter how brilliant your ideas are, since they will be imprisoned in your head, delivering value to no one.

If you develop all of those skills, you will find a place in any business environment. The future of your technical career may just lie in mastering the fundamental skill of writing. ◆

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Career Watch

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Tech Generations

We've been told that young people entering the workforce will expect to use the same technology they're accustomed to using in their personal lives: social media, text messaging, video chat. The funny thing about that conventional wisdom is that the youngest workers are the *least* likely to use any of those things. That's one of the findings of a study conducted for Citrix Online by Forrester Consulting.

On the job, members of Generation Y are less likely to use collaborative technology.

	Gen Y	Boomers age 55+
Share information via text message	26%	47%
Use social networking	40%	50%

And it turns out texting and other forms of multitasking are overwhelmingly frowned upon during meetings. According to the survey, 83% of the respondents believe that side conversations are unacceptable during a meeting, and 77% disapprove of doing other work on a computer or smartphone.

SOURCE: FORRESTER CONSULTING LLC ONLINE SURVEY OF 797 PEOPLE WHO USE COMPUTERS IN THEIR JOBS IN THE U.S., THE U K , FRANCE, GERMANY AND AUSTRALIA; SEPTEMBER 2010

Q&A

Todd Thibodeaux

The president and CEO of **CompTIA** *discusses the IT job outlook.*

Are things looking up for IT job seekers? Yes, but in a small way. Data from the Bureau of Labor Statistics indicates jobs were added in the category of "computer systems design and related services" in June, July and August. The change was very small, but it's trending in the right direction. Our own CompTIA IT Industry Business Confidence Index for September found that 37% of surveyed firms expect to add staff in the next six months, the same percentage as in the June 2010 index. Medium-size IT firms – meaning companies with annual revenue of $20 million to $100 million – have the most aggressive hiring plans, with 48% of those companies indicating they plan to expand staffing over the next six months. For large companies – those with $100 million or more in annual revenue – a slightly smaller number, 44%, said they plan staff expansions.

What would you tell unemployed IT professionals who are finding that their skills are a poor match for the market? Any IT skill maintains its relevance, because workers are frequently dealing with legacy and embedded systems. But the key for anyone who desires a long-term career in IT is to keep your skills fresh and up to date. When the economy is good, companies have the resources to pay for continuing education and training for their workers. Unfortunately, that's often one of the areas cut first when budgets tighten. It's incumbent on the individual IT worker to take control of a lifelong learning plan so that their job skills stay current with what employers are looking for.

Employers want IT workers who can use technology for critical thinking. Demonstrate your ability to analyze a problem, solve it using available technology, and communicate your solution to others. While organizations may have slowed their spending on new IT projects, they're still pushing to squeeze more out of the systems they have in place. That requires the expertise of IT professionals who can identify ways to use technology to make the business operate more efficiently or less expensively.

Which sectors of the economy seem most promising for IT pros? Finance, education, government, entertainment, transportation, healthcare – technology is deeply embedded in virtually every business and industry, and in businesses of all sizes, especially among the small businesses that account for the bulk of the nation's economy. A big opportunity for IT workers will occur in the health industry. Healthcare employers need workers with IT security skills, project management experience and networking qualifications. Employment opportunities exist with managed technology service providers that support medical facilities around the country. They're being called upon in large numbers to assist in the nationwide transition to electronic health records systems. This transition will also create a new category of hybrid jobs requiring a mix of healthcare knowledge and high-tech expertise. But it's important to look for opportunities that combine your technological savvy with something you're passionate about or at least somewhat interested in.

– JAMIE ECKLE

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SHARK TANK

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

HAL MAYFORTH

Demanding, Redefined

Pilot fish accepts a new job, and at first everything in the employer's IT department looks fine – until he finds out about the chief. "The CIO, who had been there for only a couple months, was an ex-military man and was very rigid and demanding," fish says. "One day, my boss called me into his office and requested that I go down to the loading dock and retrieve all the printer manuals that I could from the Dumpster. Seems that the CIO walked into my boss's office, saw a lot of manuals on a shelf, asked what they were and promptly swept them into several trash cans. Yes, they were manuals for older printers, but they were for devices that were still in use throughout the office. Nothing much my boss could do or say except attempt to gather them up again the next day."

Can You Feel the Love Here?

Young consultant pilot fish is sent on assignment to a customer's site to help with a system documentation problem. "When I arrived on-site, I met with the management team and was informed that they wanted me to work closely with the system administrator and document the systems and his procedures," says fish. "Their fear was that he was planning to leave, and they wanted to make sure that the systems were properly documented so that if he quit suddenly, they would not be left without any documentation of how the systems work. I spent the next week following and interviewing the helpful system admin and diligently documented his procedures and the systems. On the last day of my assignment, the system admin came to me and said, 'I know why you're really here.' I just looked puzzled. He then said, 'You're here to document everything because management is planning on firing me.' As I walked out the door, I just kept thinking to myself that this company had a lot bigger issue than a documentation problem."

User Training

Whenever this pilot fish is at remote sites, he can't log in wirelessly – but tech support keeps saying it's a "probable user error." So one day fish brings his laptop in to HQ. "Although it was configured to work on the company's internal system, now it doesn't work there, either," says fish. "Armed with this new information, I ask the tech, 'Show me where I'm messing up.' Forty-five minutes later, the tech gives up on diagnosis and simply reinstalls the client software and resets the configuration. Now everything works. It's wonderful how I suddenly got transformed from inept to thoroughly competent. Best user training I ever had."

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FRANK HAYES

In Age of WikiLeaks, Even Santa Can't Keep Secrets

SANTA SHOOK HIS HEAD as he gazed at the PC's screen. "We never should have computerized," he sighed. "Sure, it made inventory and fulfillment and logistics much more effective. But now someone has leaked my list of who's been naughty and nice this year to WikiLeaks. We'll never hear the end of it."

"Aw, cheer up, chief," said the elf at his elbow, tapping away on an iPad. "I'm pretty sure everybody already knew what you thought of 'em. Besides, those leaks just trickle out, and we're almost done — you just have to decide what to give the IT industry bigwigs. They were all over the naughty list this year."

"Let's see," said Santa, scrolling down. "There's Mark Hurd, who had to leave HP because of a sex scandal disguised as expense-account cheating. He then replaced Chuck Phillips, who had to leave Oracle because of a sex scandal advertised on a Times Square billboard."

"And they both worked for Larry Ellison, who practically *invented* being naughty, way back when," the elf said. "This year Larry finally got the America's Cup yachting trophy he always asked you for. What more does he need?"

"Maybe a nice dinner for two at some fancy San Francisco restaurant," Santa chuckled. "He could invite Leo Apotheker, the new head guy at HP, who's a real bon vivant. I understand Larry really wants to talk to Leo about his days as boss of SAP."

"And for Mark and Chuck, let's say a golf lesson with Tiger Woods. I'm sure they'll all have lots to talk about," said the elf, his fingers dancing across the face of the tablet. "OK, chief, what about Steve Jobs? He's already got the Beatles on iTunes, and Apple is worth more than Microsoft. Of course, the new iPhones had that little antenna problem, and Apple won't put Flash or Java on them, but no one seems to hold that against him."

"Nothing sticks to Steve," said Santa. "Give him a Teflon-coated frying pan. He's going head-to-head with the Google guys and their Android now, and that competition is about to get a lot hotter. And speaking of Larry, Sergei and Eric, can we give them anything to help remind them that some people *do* care about privacy?"

"You're still ticked that the North Pole Street View cars hoovered up all those e-mails from kids, eh?" the elf said. "How about tickets to that Facebook movie? The Googlers could go see it with Mark Zuckerberg, and he can tell them what it's really like to lose your privacy."

"Fair enough," said Santa. "Who's left? I hear Steve Ballmer is giving every Microsoft employee a new Windows phone, so they'll move at least 89,000 of them. With his stockholders saying it's time to break up Microsoft, let's give him a roll of duct tape to keep it together.

"Sam Palmisano needs a desk calendar. If he can keep his job one more quarter, he'll be the longest-tenured Big Blue CEO in history whose name wasn't Watson. And throw in an Old Farmer's Almanac for Marc Benioff at Salesforce.com. He can study it to see if he's ever going to have a day without a cloud. That's it, I think."

"Done," said the elf with a final tap. "The sleigh should be loaded in 15 minutes, and you can take off in 30."

"That fast?" asked Santa, surprised.

"Inventory, fulfillment and logistics, chief. That's why we got all this IT, remember?"

"Ho-ho-ho!" laughed Santa. "At this rate, I may just beat WikiLeaks after all!" ◆

Can we give Larry, Sergei and Eric anything to help remind them that some people *do* care about privacy?

Frank Hayes has been covering the intersection of business and IT for three decades. Contact him at cw@frankhayes.com.

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